Response to Amendment

This action is responsive to an RCE request and amendment filed on 2/16/2010 following the Board of Patent Appeals and Interferences decision made on December 23, 2009.
New claims 55-57 are submitted. Claims 3, 11, 16-18, 21 and 36-49 are cancelled, hence claims 1, 2, 4-10, 12-15, 19, 20, 22-35 and 50-57 are now pending.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114 was filed in this application after a decision by the Board of Patent Appeals and Interferences, but before the filing of a Notice of Appeal to the Court of Appeals for the Federal Circuit or the commencement of a civil action. Since this application is eligible for continued examination under 37 CFR 1.114 and the fee set forth in 37 CFR 1.17(e) has been timely paid, the appeal has been withdrawn pursuant to 37 CFR 1.114 and prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 2/16/2010 has been entered.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Jonathan Owens on March 1, 2010.

AMENDMENT TO CLAIMS

1. (canceled)

2. (currently amended) The method as claimed in claim ~~1~~ 55 wherein the meta data header includes a cycle mark value which includes a pattern used to locate cycle boundaries, and a cycle count value specifying a cycle number of a cycle in which the isochronous received packet of data was received.

3. (canceled)

4. (canceled)

5. (currently amended) The method as claimed in claim ~~1~~ 55 wherein adding a header to the isochronous received packet of data is performed by an embedded stream processor within the media storage device.

6. (currently amended) The method as claimed in claim ~~1~~ 55 wherein the isochronous received packet of data is received from a bus structure which complies with a version of an IEEE 1394 standard.

7. (currently amended) The method as claimed in claim ~~1~~ 55 wherein the media storage device is a hard disk drive.

8. (currently amended) A method of reading data from a media storage device which has previously been stored with header data generated by the media storage device, the header data comprising both a packet header and a meta data header comprising:

a. locating a first header data comprising a meta data header and including a cycle mark value having a pattern, wherein the pattern is used to locate cycle boundaries, and the first header data further includes a cycle count value specifying a cycle number of a cycle in which the previously stored packet of data was received, further wherein packets have been stored on the media storage device by grouping packets received on multiple channels within a same isochronous cycle into a cycle group of packets and adding the meta data header to the cycle group of packets;

b. reading a previously stored packet of data following the first header data from a media within the media storage device, the previously stored packet of data including a packet header;

c. stripping the first header data from the previously stored packet of data at the media storage device thereby forming an isochronous retrieved packet of data; and

d. transmitting the isochronous retrieved packet of data over an isochronous channel to another device, wherein transfers over the isochronous channel take place such that time intervals between significant instances have a same duration at both transmitting and receiving applications.

9. (previously presented)The method as claimed in claim 8 wherein transmitting includes transmitting the manipulated packet of data onto a bus structure which complies with a version of an IEEE 1394 standard.

10. (canceled)

11. (canceled)

12. (original) The method as claimed in claim 8 wherein stripping the first header data from the previously stored packet of data is performed by an embedded stream processor within the media storage device.

13. (original) The method as claimed in claim 8 wherein the media storage device is a hard disk drive.

14. (previously presented) The method as claimed in claim 8 wherein locating the first header data, including a cycle mark value having a pattern includes locating the pattern within the previously stored data, then determining if a cycle count value within the first header data is within an appropriate range, determining if an isochronous header follows the first header data and then determining a data length value.

15. (original) The method as claimed in claim 14 wherein the appropriate range is any number including and between 0 and 7999.

16-18. (canceled)

19. (currently amended) A computer readable medium comprising a meta data header added to isochronous received packets by a media storage device as the packets are recorded on storage media within the media storage device, each of the isochronous received packets including an existing header to which the meta data header is added such that the isochronous received packets include both an existing header and a meta data header, the meta data header comprising:

a. a cycle mark value including a pattern used to locate cycle boundaries within the received packets; and

b. a cycle count value specifying a cycle number of a cycle in which the received packets are received;

wherein packets are received on multiple channels, grouped with packets received on multiple channels within a same isochronous cycle into a cycle group of packets and the meta data header is added to each group of isochronous received packets received during the same isochronous cycle, wherein each of the isochronous received packets are received over an isochronous channel, and further wherein transfers over the isochronous channel take place such that time intervals between significant instances have a same duration at both transmitting and receiving .

20. (currently amended) The computer readable medium as claimed in claim 19 wherein the cycle count value has a range between and including 0 and 7999.

Claims 21-23 (canceled)

24. (currently amended) A media storage device comprising:

a. means for interfacing for receiving an isochronous stream of data over an isochronous channel, thereby forming a received isochronous stream of data, and also for transmitting a retrieved isochronous stream of data, the received stream of data including packet header data, wherein transfers over the isochronous channel take place such that time intervals between significant instances have a same duration at both transmitting and receiving applications;

b. means for storing data for storing and retrieving the received isochronous stream of data; and

c. means for processing coupled to the means for interfacing and to the means for storing for adding meta header data to the received isochronous stream of data as the received isochronous stream of data is received at the media storage device, such that each packet within the received isochronous stream of data includes both packet header data and meta header data, and providing the meta header data and the received isochronous stream of data to the means for storing for recording thereby forming a recorded stream of data, the meta header data including a cycle mark value marking cycle boundaries within the recorded stream of data;

wherein receiving the received packet of data includes receiving packets of data on multiple channels and further wherein adding a meta data header to the received packet of data includes grouping packets received on multiple channels within a same isochronous cycle into a cycle group of packets and adding the meta data header to the cycle group of packets.

25. (original) The media storage device as claimed in claim 24 wherein the means for processing is an embedded stream processor which also locates a first cycle mark value within the recorded stream of data during a playback operation, reads packets within the recorded stream of data after the first cycle mark value, strips the header data from read packets within the recorded stream of data thereby forming retrieved packets of data and transmits the retrieved

packets of data through the means for interfacing to a receiving device.

26. (previously presented) The media storage device as claimed in claim 25 wherein the receiving device is coupled to the means for interfacing by a bus structure which complies with a version of an IEEE 1394 standard.

27. (previously presented) The media storage device as claimed in claim 25 wherein the embedded stream processor locates the first cycle mark value by locating a pattern included within the cycle mark value, then determining if a cycle count value within the header data is within an appropriate range, determining if an isochronous header follows the header data and then determining a data length value.

28. (original) The media storage device as claimed in claim 27 wherein the appropriate range is any number including and between 0 and 7999.

29. (original) The media storage device as claimed in claim 24 wherein the header data further includes a cycle count value specifying a cycle number of a cycle in which packets of data within the received stream of data were received.

30. (currently amended) A media storage device comprising:

a. an interface circuit to receive an isochronous stream of data over an isochronous channel, thereby forming a received isochronous stream of data, and also to transmit a retrieved isochronous stream of data, the received isochronous stream of data including packet header data, wherein transfers over the isochronous channel take place such that time intervals between significant instances have a same duration at both transmitting and receiving applications;

b. storage media configured to store and retrieve the received stream of data; and

c. an embedded stream processor coupled to the interface circuit and to the storage media to add meta header data to the received isochronous stream of data as it is received at the media storage device, such that each packet within the received isochronous stream of data includes both packet header data and meta header data, and provide the meta header data and the received isochronous stream of

data to the storage media for recording to form a recorded stream of data, the meta header data including a cycle mark value marking cycle boundaries within the recorded stream of data;

wherein receiving the received packet of data includes receiving packets of data on multiple channels and further wherein adding a meta data header to the received packet of data includes grouping packets received on multiple channels within a same isochronous cycle into a cycle group of packets and adding the meta data header to the cycle group of packets.

31. (original) The media storage device as claimed in claim 30 wherein the embedded stream processor also locates a first cycle mark value within the recorded stream of data during a playback operation, reads packets within the recorded stream of data after the first cycle mark value, strips the header data from read packets within the recorded stream of data thereby forming retrieved packets of data and transmits the retrieved packets of data through the interface circuit to a receiving device.

32. (previously presented) The media storage device as claimed in claim 31 wherein the receiving device is coupled to the media storage device by a bus structure which complies with a version of an IEEE 1394 standard.

33. (previously presented) The media storage device as claimed in claim 31 wherein the embedded stream processor locates the first cycle mark value by locating a pattern included within the cycle mark value, then determining if a cycle count value within the header data is within an appropriate range, determining if an isochronous header follows the header data and then determining a data length value.

34. (original) The media storage device as claimed in claim 33 wherein the appropriate range is any number including and between 0 and 7999.

35. (original) The media storage device as claimed in claim 30 wherein the header data further includes a cycle count value specifying a cycle number of a cycle in which packets of data within the received stream of data were received.

36-49. (canceled).

50. (currently amended) A method of writing data to a media storage device comprising:

a. receiving an isochronous received packet of data over an isochronous channel to be written to the media storage device, the isochronous received packet of data including a packet header and a common isochronous packet header, wherein transfers over the isochronous channel take place such that time intervals between significant instances have a same duration at both transmitting and receiving applications;

b. adding a meta data header to the isochronous received packet of data at the media storage device thereby forming an extended packet of data which includes the packet header, the common isochronous packet header and the meta data header; and

c. storing the extended packet of data onto a media within the media storage device; wherein receiving the received packet of data includes receiving packets of data on multiple channels and further wherein adding a meta data header to the received packet of data includes grouping packets received on multiple channels within a same isochronous cycle into a cycle group of packets and adding the meta data header to the cycle group of packets.

51. (currently amended) A media storage device comprising:

a. an interface circuit to receive an isochronous stream of data over an isochronous channel, thereby forming a received isochronous stream of data, and also to transmit a retrieved isochronous stream of data, wherein transfers over the isochronous channel take place such that time intervals between significant instances have a same duration at both transmitting and receiving applications;

b. storage media configured to store and retrieve the received isochronous stream of data, wherein the received isochronous stream of data includes one or more received isochronous packets of data, each including both a packet header and a common isochronous packet header; and

c. an embedded stream processor coupled to the interface circuit and to the storage

media to add a meta data header to each received isochronous packet in the received stream of data as it is received at the media storage device, thereby forming an extended packet of data, and provide the extended packet of data to the storage media for recording to form a recorded stream of data, the meta data header including a cycle mark value marking cycle boundaries within the recorded stream of data;

wherein receiving the received packet of data includes receiving packets of data on multiple channels and further wherein adding a meta data header to the received packet of data includes grouping packets received on multiple channels within a same isochronous cycle into a cycle group of packets and adding the meta data header to the cycle group of packets.

52. (currently amended) A method of writing data to a media storage device comprising:

a. receiving an isochronous received packet of data over an isochronous channel to be written to the media storage device, the isochronous received packet of data including a packet header, wherein the media storage device maintains the packet header with the received packet of data, wherein transfers over the isochronous channel take place such that time intervals between significant instances have a same duration at both transmitting and receiving applications;

b. adding a meta data header to the isochronous received packet of data at the media storage device thereby forming an extended packet of data including both the packet header and the meta data header; and

c. storing the extended packet of data onto a media within the media storage device;

wherein receiving the received packet of data includes receiving packets of data on multiple channels and further wherein adding a meta data header to the received packet of data includes grouping packets received on multiple channels within a same isochronous cycle into a cycle group of packets and adding the meta data header to the cycle group of packets.

53. (currently amended) A computer readable medium comprising a meta data header added to isochronous received packets by a media storage device as the packets are recorded on storage media within the media storage device, each of the isochronous received packets including an existing header, wherein the media storage device maintains the existing header with the isochronous received packets, the meta data header comprising:

a. a cycle mark value including a pattern used to locate cycle boundaries within the received packets; and

b. a cycle count value specifying a cycle number of a cycle in which the received packets are received;

wherein packets are received on multiple channels, grouped with packets received on multiple channels within a same isochronous cycle into a cycle group of packets and the meta data header is added to each group of isochronous received packets received during the same isochronous cycle, wherein each of the isochronous received packets are received over an isochronous channel, and further wherein transfers over the isochronous channel take place such that time intervals between significant instances have a same duration at both transmitting and receiving applications.

54. (currently amended) A media storage device comprising:

a. an interface circuit configured to receive an isochronous stream of data over an isochronous channel, thereby forming a received isochronous stream of data, and also to transmit a retrieved isochronous stream of data, the received stream of data including packet header data, wherein transfers over the isochronous channel take place such that time intervals between significant instances have a same duration at both transmitting and receiving applications;

b. storage media configured to store and retrieve the received isochronous stream of data; and

c. an embedded stream processor coupled to the interface circuit and to the storage media to add meta header data to the received isochronous stream of data as it is received at the media storage device and provide the meta header data and the received isochronous stream of data, including the packet header data, to the

storage media for recording to form a recorded stream of data, the meta header data including a cycle mark value marking cycle boundaries within the recorded stream of data;

wherein receiving the received packet of data includes receiving packets of data on multiple channels and further wherein adding a meta data header to the received packet of data includes grouping packets received on multiple channels within a same isochronous cycle into a cycle group of packets and adding the meta data header to the cycle group of packets.

55. (currently amended) A method of writing data to a media storage device comprising:

a. receiving an isochronous received packet of data over an isochronous channel to be written to the media storage device, the isochronous received packet of data including a packet header, wherein transfers over the isochronous channel take place such that time intervals between significant instances have a same duration at both transmitting and receiving applications;

b. adding a meta data header to the isochronous received packet of data at the media storage device thereby forming an extended packet of data including both the packet header and the meta data header; and

c. storing the extended packet of data onto a media within the media storage device;

wherein receiving the received packet of data includes receiving packets of data on multiple channels and further wherein adding a meta data header to the received packet of data includes grouping packets received on multiple channels within a same isochronous cycle into a cycle group of packets and adding the meta data header to the cycle group of packets.

56. (currently amended) A method of writing data to a media storage device comprising:

a. receiving from a bus structure which complies with a version of an IEEE 1394 standard, isochronous received packets of data over multiple isochronous channels to be written to the media storage device, each of the isochronous received packets of data including a packet header, wherein transfers over isochronous channels take place such that time intervals between significant instances have a same duration at both transmitting and receiving applications;

b. adding a meta data header to each of the isochronous received packets of data at the media storage device thereby forming extended packets of data each including both the packet header and the meta data header, wherein the meta data header includes a cycle mark value which includes a pattern used to locate cycle boundaries, and a cycle count value specifying a cycle number of a cycle in which the isochronous received packet of data was received and further wherein adding a meta data header to the received packets of data includes grouping packets received on multiple channels within a same isochronous cycle into a cycle group of packets and adding the meta data header to the cycle group of packets; and

c. storing the extended packets of data onto a media within the media storage device.

57. (canceled)

Allowable Subject Matter

Claims 2, 5-9, 12-15, 19, 20, 24-35 and 50-56 are allowable over the prior art of record, renumbered as claims 1-31, respectively.

The following is an examiner's statement of reasons for allowance:

Claims 8, 19, 24, 30 and 50-56 are allowable because the best prior art of record or that encountered in searching for the invention, fails to disclose or suggest transfers over an isochronous channel take place such that time intervals between significant instances have same duration at both transmitting and receiving applications, and adding a meta data header to a received packet of data includes grouping packets received on multiple channels within a same isochronous cycle into a cycle group of packets and adding the meta data header to the cycle group of packets, as claimed in addition to the other claim provisions.

With regard to claims 2, 5-7, 9, 12-15, 20, 25-29, and 31-35, depend from allowable claims 8, 19, 24, 30 and 55 respectively, and are therefore allowable on the same basis.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following prior arts show the state of art with respect to pattern matching.

USPN. 5,544,324; 6,560,200; 7,117,222; 7,529,780

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARC R. FILIPCZYK whose telephone number is (571)272-4019. The examiner can normally be reached on Mon-Fri, 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ali can be reached on 571-272-4105. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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March 4, 2010
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